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FACTORS AFFECTING EARLY RETIREMENT DECISION IN CRISES

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ABSTRACT

This quantitative study tries to finds out what are the factors that influence a worker's decision to retire early, especially in crisis conditions. Using Susenas data for the September 2008 period, this study regresses the variables related to family and occupational characteristics in the logistic model. The odds ratio calculation results show that men who are married, live in urban areas, or work in the forestry sector tend to retire early. Besides, the age factor does not play a significant role in retirement decisions. By taking into account the conditions of distribution of social protection assistance which are generally "flat", this research is expected to provide a new intuition for the Government to design a better system.

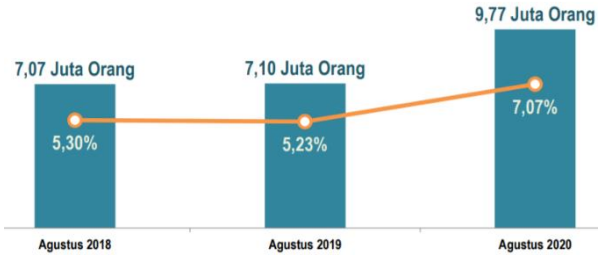
1. INTRODUCTION

1.1 Background

COVID-19 Pandemic has affected many aspects of life. The Pandemic has spread and spread almost all over the world. Like it or not, the Government must face the COVID-19 Pandemic, not only from the health aspect but also from the aspect of economic recovery. The COVID-19 Pandemic has also significantly affected the labor market.

When there is a market failure, the Government needs to intervene in the market. One of the market failures in the COVID-19 Pandemic is the high unemployment rate. Unemployment is increasing because many companies have made layoffs (PHK). The number of unemployed people in August 2020 reached 9.77 million people. This number increased when compared to the data in the same month in 2019, which was 7.1 million people, and in 2018 it was 7.07 million people. In percentage terms, the unemployment rate will increase to 7.07% in 2020. This figure is quite far beyond the unemployment rate of the previous two years, namely 5.23% in 2019 and 7.07% in 2018.

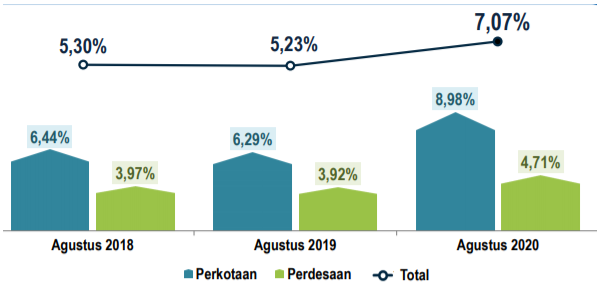
Number of Unemployment and Open Unemployment Rate in August 2018-2020 (YoY)



Source: Berita Resmi Statistik (BPS), November 5th, 2020

The Government needs to look deeper into the rising unemployment rate in Indonesia, especially during the COVID-19 Pandemic. Of the 203.97 million working-age population, there are around 138.22 million people in the labour force. Of the total workforce, there was an increase in unemployment of 2.67 million people in August 2020 (YoY). If we look closely, in August 2020, the urban unemployment rate was more significant than the national average, which was 8.98% (YoY). Interestingly, the open unemployment rate in rural areas is much lower than in urban areas, namely at 4.71% (YoY). By comparing the data for 2018 s.d. 2020, the unemployment rate in urban areas is more volatile than in rural areas. In simple terms, we can judge that the impact of the COVID-19 Pandemic is more pronounced for people living in urban areas.

Open Unemployment Rate in Cities Higher than in the countryside



Source: Berita Resmi Statistik (BPS), November 5th, 2020

Due to a large number of unemployed workers, the Government needs to find out what causes a large number of unemployed people. For the most part, the public will judge that the increase in the number of unemployed people is due to layoffs from the company where the employee works. However, we also need to ask how many people decide to quit voluntarily? Furthermore, this research will refer to voluntary work as early retirement.

During the COVID-19 Pandemic, the Government launched the National Economic Recovery Program (PEN). As of September 2020, details of the realization of the PEN program are 7.36 trillion rupiahs for the health sector, 93.18 trillion rupiahs for the social protection sector, 12.4 trillion rupiahs for the K / L sector and the local Government, 17.23 trillion rupiahs for incentives business, and 44.63 Trillion Rupiah for UMKM Support.

The PEN program related to Social Protection is the program with the largest allocation. In its distribution, the Government faces many problems. One of the classic problems in distributing aid is the validity of data on the receipt of social assistance. Due to these constraints, most social protection programs are distributed under the "flat rate" concept.

Apart from these shortcomings, the Government has segmented the receipt of social assistance to make it more targeted. However, there is always room for improvement in the formulation of these policies.

This study seeks to find out what are the factors that influence a person's decision to retire early. The decision to retire early will undoubtedly have a significant impact on low-income people. In this condition, the Government needs to intervene and protect vulnerable people (poor of the poorest).

This study tries to assist the Government in identifying what factors influence a person's decision to retire early. This research is expected to provide more specific input to the Government in designing the distribution of the Social Protection Program to make it better in the future.

2. Theoretical Framework and Hypothesis Development

In the COVID-19 Pandemic, the country is experiencing a 'loss' because income has dropped, mainly from taxes, while spending is soaring because it has to deal with emergencies, provides a social safety net, overcomes sick people, mobilizes extra officials and health workers, and pays interest for new debts. (Hadiwardoyo et al., 2020) include that the key to restoring national economic conditions is survival at the level of individuals and business entities. What is needed is the right policy, both in terms of location, time and procedure.

Many of the impacts caused by this Pandemic are mainly in the Indonesian economic sector, one of which is unemployment. (Jalil et al., 2020) stated that the leading cause of unemployment to increase during this Pandemic was layoffs. It happened because many companies stopped their operations, either because of lockdown policies, social distancing, and PSBB.

If the company's financial condition does not allow to avoid layoffs, the entrepreneur can make efforts to explain the company's condition, following the Minister of Manpower and Transmigration Circular No. SE 907 / Men / PHI-PHI / X2004, from several stages that must be carried out, the last option if the company has to lay off its employees is to provide early retirement for those who have met the requirements.

Early retirement is a form of retirement that occurs at the willingness of the employees themselves or organizational encouragement which is carried out earlier than the proper retirement stipulation (Rio Martha Djamhur Hamid, 2017). The context of early retirement in this study is not retirement with still receiving compensation from the company. In this study, what is meant by early retirement is the decision to stop working for people who are unemployed either because of layoffs or other reasons.

From the workers' point of view, the decision to retire early hurts workers. Referring to research conducted by (Lesmana, 2017), retired employees of PTN II in Basilam Village are mostly less prepared to face this early retirement policy. The early retirement policy has decreased the economic welfare of retired employees by 17.64% from the previous income.

From the perspective of pension fund managers, the COVID-19 Pandemic has made many customers choose to withdraw their pension funds before entering retirement age. This phenomenon can also be called the phenomenon of early retirement due to

If customers withdraw pension funds simultaneously, of course, this will harm liquidity, solvency, and the investment value of pension fund managers. We can learn from the PT Asuransi Jiwasraya (Persero) scandal in 2020, which has sparked pressure on the domestic stock market, in addition to sentiment from the COVID-19 Pandemic. The decline in investment value also indirectly occurred in pension funds, as a result of corrections in the market (Wareza, 2020).

In the Indonesian context, the retirement age limit is a separate polemic. The retirement age limit is stipulated in the work agreement; this is based on Law Number 13 the Year 2003 concerning Manpower, Article 154 Letter c. It means that the Manpower Act does not specify a specific retirement age limit. Furthermore, in 2015 the Government issued government regulation number 45 of 2015 concerning the implementation of a pension security program which is a derivative of law number 40 of 2004 concerning the national social security system. In this regard, for the first time, the Government has set a pension age limit of 56 years. Still based on the same provisions, the retirement age limit will change to 57 years on January 1st, 2019 and continue to increase by one year every three years until it reaches the limit of 65 years.

In addition, women on average live longer than men and are more likely to live alone or be widowed. Inspite of their greater needs, they are more likely to arrive at retirement without secure housing, to have saved less because of caring duties and lower wages, and thus to experience greatly restricted lifestyles in retirement. They are more likely to require expensive end of lifecare for longer than men on average and endure a lower quality of life. In all countries, recent developments in the labor market, exacerbated by the impacts of COVID-19, will affect both genders but will continue to be more pronounced for women and younger workers (Dale & St John, 2020).

On the other side, the economy of the United States has been slowing down and caused unprecedented layoffs. The COVID-19-induced economic uncertainty caused significant shifts in consumer food spending. Food sales from restaurants and bars struggled, while food sales from grocery stores and online food retailers significantly increased. These sudden shifts in consumer demand stressed the food supply chain, leading to many labor-market disruptions. In response, the US government deemed workers in the primary agricultural and food manufacturing, distribution, and retail industries as critical to food security and issued exemptions from stay-at-home orders for these workers (Luckstead et al., 2020).

However, the government needs to protect workers, especially those who work in the agricultural sector. This policy needs to get more priority because the agricultural sector is one of the sectors that can implement health protocols relatively more easily than

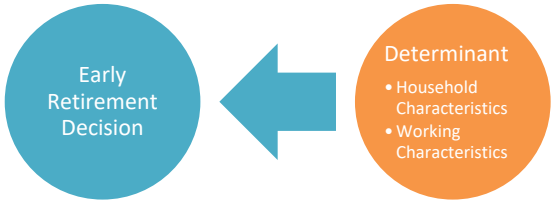
the industrial and tourism sectors. In addition, the elasticity of demand for agricultural production is relatively lower because in any condition people still have to eat. Therefore, it seems obvious that there is a link between the working environment, especially in the agricultural sector, and policies to reduce unemployment during the pandemic.

As mention by (Chirisa et al., 2020), despite the rising death toll during pandemic, unemployment rates also have sky rocketed. This is due to the fact that most of Africa's economy has been dominated by the informal sector and the SME's. Nation states lockdown and social and physical distancing in response to the pandemic have escalated the urban poor's misery. While in Indonesia, The Central Bureau of Statistics (BPS) notes that the number of unemployed people in Indonesia has increased to 9.77 million people by August 2020. Of these, the increase in unemployment has mostly occurred in urban areas compared to rural areas.

Government policy in responding to the phenomenon of early retirement must be neutral. The policy should limit the incentives for employees to leave the labor force. Besides, the mechanism for distributing subsidies, in this case, the social protection program, needs to be ensured so that it remains targeted. The Government also needs to know how many citizens decide to retire early. This data will be used by the Government to find the best alternative to protect people from the early retirement age to the retirement age limit following statutory regulations (Csaba Feher, 2020).

To find the right model to explain the phenomenon of early retirement, the Government can use several indicators. (Kubicek et al., 2010) provide two indicators that can be used to predict early retirement decisions. The two indicators are family background and job characteristics. Furthermore, they explained that family background indirectly influences early retirement decisions through indicators related to marital status. Besides, job characteristics indirectly influence early retirement decisions through health conditions in the work environment.

Research Framework
Source: (Kubicek et al., 2010)



From the theoretical basis above, we suspect that there is a relationship between the early retirement decision and several determining factors, such as gender, age, demographics, experience, and the working environment conditions of the respondents. To be able to confirm the truth of these allegations, this study will test these allegations with a quantitative approach. Therefore, the hypothesis in this study is formulated as follows:

- Alternative hypothesis
  Gender, age, demographics, experience, and work environment conditions of respondents **will** significantly influence early retirement decisions.

- Null hypothesis
  Gender, age, demographics, experience, and working conditions of respondents **will not** significantly influence early retirement decisions.

3. Methodology

The data used in this research will be based on a sample from the 2018 National Socio-Economic Survey (SUSENAS) data. There were 1,131,825 observations at the individual level and 257,790 observations at the household level used in this study. Furthermore, all data in this study will use analysis at the household level.

This quantitative research will use Logistic Regression as a problem-solving tool with the help of Stata software. The main limitation of linear regression is that the model cannot handle dichotomy and categorical dependent variables. Log regression results in the ratio of opportunities expressed by the transformation of log functions. Thus, the function of the log transformation or ln is required for p-value. Log distribution (or logistics transformation p) is also called logit of p or logit (p) (Teddy Hendra Zulkarnain, 2016).

$$\text{Logit (p)} = \text{Log (p/1-p)} = \text{Ln (p/1-p)}$$

The form of the logit equation (p) is a log of the odds ratio function or likelihood ratio with the possibility (p) ranging between 0 and 1. In contrast, the logit (p) is unlimited. The general form of logistics regression opportunity model with p is a probability function, formulated as follows:

$$\rho = \frac{\text{e } (\text{a} + b_1 + b_2 + \cdots + b_n+)}{1 + \text{e } (\text{a} + b_1 + b_2 + \cdots + b_n+)}$$

Where p is the probability that the case is in a particular category, e is the basis of the natural log (exp ≈ 2.72), a is a constant of the equation, and b is the logistic regression coefficient of the predictor variable.

Logit (log odds) is the slope coefficient (b) of the regression equation. The slope here is the change in the average value of Y from one-unit change in the value of X. Logistic regression looks at changes in the value of the dependent variable which is transformed into opportunities, not the original value as in linear regression.

The likelihood ratio test is based on the Chi-square probability calculation. This study uses a significance level of 5% to determine whether the predictor variables provide a significant difference compared to the null hypothesis. Chi-square was used to assess the significance of this ratio. When the probability value is lower than 5%, then the independent variable (predictor) does not have an increasing effect (i.e. makes no difference) in predicting the dependent variable.

Logistic regression also yields odds ratios associated with the value of each predictor. The odds of an event are defined as the probability of an outcome occurring divided by the probability that an event does not occur. In general, odds ratios are a set of odds divided by other odds. The odds-to-predictor ratio is defined as the relative number in which the probability of an outcome increases (odds ratio> 1) or decreases (odds ratio <1) when the value of the predictor variable increases by 1 unit.

This study will use the National Socio-Economic Survey data, the module for the Main Information of Household Members for September 2018.

The research model used is as follows:

$$\begin{aligned}\text{PENSION} = \alpha + \beta_1\text{MARRIED} + \beta_2\text{WOMAN} + \beta_3\text{AGE} \\ + \beta_4\text{AGRI} + \beta_5\text{HOLTI} + \beta_6\text{PLANT} \\ + \beta_7\text{FISH} + \beta_8\text{FARM} + \beta_9\text{FOREST} \\ + \beta_{10}\text{VILLAGE}\end{aligned}$$

Because this study uses logistic regression, the dependent variable, namely PENSION, is binary data. PENSION with a value of 1 is a condition in which the respondent during the last week since the survey was conducted, did not have a job/business with reasons:

1. Despair
2. Feeling that it is impossible to get a job (an excuse for those who seek work many times, but are unable to get a job so that they feel impossible to get a job
3. Those who feel that because of the situation/condition/climate/season it is impossible to get the job they want)

All Independent Variables other than AGE are binary data. In more detail, the explanation is as follows:

1. MARRIED {1= MARRIED, 0=NOT MARRIED }
2. WOMAN {1= WOMAN, 0=MAN }
3. AGRI {1= Working in Agriculture Sector}
4. HOLTI {1= Working in Horticulture Sector }
5. PLANT {1= Working in Plantation Sector }
6. FISH {1= Working in Fishery Sector }
7. FARM {1= Working in the Farming Sector }
8. FOREST {1= Working in Forestry Sector }
9. VILLAGE {1= VILLAGE, 0= CITY}
10. AGE {Age, range from 15 to 65 years old}

Alpha (α) is the intercept value of the regression model, and Beta (β) is the coefficient value of each parameter.

To test whether the model is correct or not, the Hosmer and Lemeshow Test conduct the Goodness of fit test (GoF), which is a test to determine whether the model formed is correct or not. It is said to be right if there is no significant difference between the model and its observation value.

4. Result

Of the initial data, 2,400 (0.93%) family heads decided to retire early on the grounds of hopelessness, feeling that it was impossible to get a job and because of the situation / condition / climate / season it was impossible to get the job they wanted.

Early Retirement Tabulation

Pension	Freq.	Percent	Cum.
0	255,390	99.07	99.07
1	2,400	0.93	100
Total	257,790	100	

Source: Data Processing

The results of the All Variable Tabulation show that both the dependent and independent variables (except AGE) are binary data. Therefore, this study is suitable to use a logistic regression model.

This study reduces observations to take into account only respondents aged between 15 s.d. 65 years to be accounted for. Fifteen years is the basic minimum age limit for someone to work, while 65 years is the retirement age limit as mandated by Government Regulation (PP) No. 45 of 2015. Implementation of the Pension Security Program.

All Variables Tabulation

Variable	Mean	Std. Dev.	Min	Max
PENSION	0.0093	0.0960	0	1
MARRIED	0.8397	0.3668	0	1
WOMAN	0.8705	0.3357	0	1
AGE	45.3500	10.7665	15	65
AGRI	0.1720	0.3774	0	1
HOLTI	0.0225	0.1483	0	1
PLANT	0.1293	0.3355	0	1
FISH	0.0344	0.1822	0	1
FARM	0.0141	0.1180	0	1

FOREST	0.0096	0.0977	0	1
OTHER	0.6181	0.4859	0	1
VILLAGE	0.5685	0.4953	0	1

Source: Data Processing

The Logistic Regression Results show that the Chi-Square probability value is lower than 5%. It proves that the Null Hypothesis is rejected. In other words, there is at least one independent variable that significantly affects the dependent variable (PENSION) in the logistic regression model.

The amount of coefficient in the Logistic Regression Results table cannot be interpreted structurally. It is because, in the logistic regression model, the dependent variable has been converted into a logarithmic scale. However, the Logistic Regression Results table can still be used to see the direction of the coefficient for each dependent variable.

All coefficients in the logistic regression model are positive, except for the MARRIED variable. It means that people who are married have a tendency not to have an early retirement. In other words, they tend to keep working in crises.

Apart from that, from the same table, it can be ascertained that all the independent variables statistically significantly affect the PENSION variable. This fact proves that in predicting people's behaviour during a crisis, the Government can use all the dependent variables in this study.

Logistic Regression's Result

Log likelihood = -13389.711
Number of obs = 257,790
LR chi2(10) = 446.21
Prob > chi2 = 0
Pseudo R2 = 0.01

PENSION	Coef.	Std.Err.	z	P>z	[95% Conf.	Interval]
MARRIED	(0.56)	0.07	(7.84)	0.00	(0.70)	(0.42)
WOMAN	0.48	0.09	5.48	0.00	0.31	0.66
AGE	(0.01)	0.00	(7.33)	0.00	(0.02)	(0.01)
AGRI	0.74	0.06	13.16	0.00	0.63	0.85
HOLTI	0.42	0.13	3.14	0.00	0.16	0.68
PLANT	0.54	0.06	8.53	0.00	0.42	0.67
FISH	0.51	0.10	4.93	0.00	0.31	0.72
FARM	0.64	0.15	4.18	0.00	0.34	0.94
FOREST	1.22	0.13	9.10	0.00	0.96	1.49
VILLAGE	0.18	0.05	3.51	0.00	0.08	0.28
_cons	(4.42)	0.11	(38.71)	0.00	(4.64)	(4.19)

Source: Data Processing

The value of the odds ratio in the indirect Odds ratio Calculation Result table is used to calculate the probability impact for each dependent variable on early retirement decisions.

Based on the Odds Ratio Calculation Results, it can be concluded that:

1. People who are married (MARRIED) will have a probability of "not" early retirement of 0.57 times than people who are not married. In this analysis, including widows due to divorce and widows due to the death of their husbands.
2. Women (WOMAN) tend to have the probability of retiring early by 1.62 times than men.
3. The older a person (AGE), the person has a probability of "not" early retirement of 0.98 times compared to younger people. Since the odds ratio is close to 1, it can be said that the probability is 50:50. It can also be proven by the logistic regression coefficient value that is close to zero, which is equal to -.0140377. Therefore, it can be said that the decision to retire early does not depend on one's age level.
4. People who have a background in employment in the agricultural sector (AGRI) will have a probability of early retirement of 0.73 times compared to people who do not work in that sector. The same analysis can be applied to those who work in the horticultural sector (HOLTI) with a probability of 0.41, the fisheries sector (FISH) with a probability of 0.51, the livestock sector (FARM) with a probability of 0.63, the plantation sector (PLANT) with a probability of 0.58, forestry sector (FOREST) with a probability of 1.22.
5. People who live in rural areas tend to have the probability of retiring early by 0.17 times compared to people who live in urban areas.

Odds Ratio's Calculation

Number of obs = 257,790
LR chi2(10) = 446.21
Prob > chi2 = 0.0000
Log likelihood = -13389.711
Pseudo R2 = 0.0164

PENSION	Odds Ratio	Std.Err.	z	P>z	[95% Conf.	Interval]
MARRIED	0.57	0.04	(7.84)	0.00	0.50	0.66
WOMAN	1.62	0.14	5.48	0.00	1.37	1.93
AGE	0.99	0.00	(7.33)	0.00	0.98	0.99
AGRI	2.09	0.12	13.16	0.00	1.87	2.33

HOLTI	1.52	0.20	3.14	0.00	1.17	1.97
PLANT	1.72	0.11	8.53	0.00	1.52	1.95
FISH	1.67	0.17	4.93	0.00	1.36	2.05
FARM	1.89	0.29	4.18	0.00	1.40	2.55
FOREST	3.40	0.46	9.10	0.00	2.61	4.43
VILLAGE	1.19	0.06	3.51	0.00	1.08	1.32
_cons	0.01	0.00	(38.71)	0.00	0.01	0.02

Source: Data Processing

The Goodness of Fit test results shows that the regression model is fit and meets the Chi-Square threshold in the logistic distribution.

The Goodness of Fit Calculation

number of observations	**=**	**257,790**
number of covariate patterns	**=**	**2,115**
Pearson chi2(2104)	**=**	**2,193.94**
Prob > chi2	**=**	**0.0842**

Source: Data Processing

5. Conclusions and Suggestion

The increase in the number of workers who decide to retire early will directly impact the number of unemployed in Indonesia. Unfortunately, BPS does not have population statistics on Early Retirement. Based on a sample from the 2018 National Socio-Economic Survey (SUSENAS) data, 1.9% of workers decided not to work / unemployed. Whether this number is. Of the initial number, 2,400 (0.93%) family heads decided to retire early on the grounds of hopelessness.

They reasoned that they had looked for work many times, but were unable to find work. It causes them to feel that it is no longer possible to get a job and decide to retire early. Besides, other factors force them to retire early, namely by looking at the situation/ condition/ climate/ season, they feel that it is impossible to get the job they want.

Based on the test results, several things can be concluded, namely as follows:

1. Men who are married, live in urban areas, or work in the forestry sector tend to have more significant potential for early retirement.
2. For those who are married, Age is not a factor that is taken into account in making early retirement decisions.

Early retirement has a negative impact on workers especially at the micro-level. At the house hold level, the Government certainly needs to formulate a more targeted social assistance policy to protect the community amid the COVID-19 Pandemic.

Furthermore, in distributing social protection programs, especially during the COVID-19 Pandemic, the Government needs to take a policy of distributing subsidies to make it right on target. One of the things that can be done is to cluster aid recipients into more specific clusters according to family and occupational characteristics. Each household should not receive the same amount of social protection assistance. The amount of assistance should be adjusted to the probability of the household head continuing/stopping Working. Gender also needs more attention because women tend to decide to quit work sooner than men. Besides, those who live in urban areas tend to decide to retire early. Finally, the Government also needs to protect workers, especially in the forestry sector.

6. Implications and Limitations

This study has limitations in the use of secondary data. To get an analysis that better reflects the factors that contribute to the decision to retire early, theoretically it would be better to use primary data. If we also use secondary data, we should use the most updated secondary data, namely in 2020.

In addition, the variable early retirement can still be interpreted for three situations, namely stopping working / looking for work for reasons of hopelessness, feeling it is impossible to get a job and because of the situation. / conditions / climate / season it is impossible to get the desired job. As a result, to be able to separate the more valid determinants of early retirement, of course we have to ask respondents more specifically. The question is related to the decision to retire early or not, voluntary or not, and the reasons behind it.

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